

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

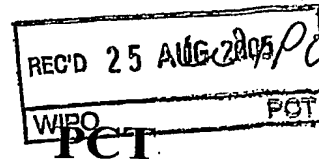
Applicant's or agent's file reference T8467745US1	<b>FOR FURTHER ACTION</b>	See item 4 below
International application No. PCT/CA2005/000699	International filing date ( <i>day/month/year</i> ) 06 May 2005 (06.05.2005)	Priority date ( <i>day/month/year</i> ) 07 May 2004 (07.05.2004)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant UNIVERSITY OF WATERLOO		

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).																								
2.	This REPORT consists of a total of 5 sheets, including this cover sheet.  In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																								
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 30%;">Box No. I</td> <td style="width: 60%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input checked="" type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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<input type="checkbox"/>	Box No. VIII	Certain observations on the international application																							
4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No. +41 22 338 82 70	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Date of issuance of this report 07 November 2006 (07.11.2006)</td> </tr> <tr> <td style="padding: 2px;">Authorized officer  Athina Nickitas-Etienne</td> </tr> <tr> <td style="padding: 2px;">e-mail: pt04@wipo.int</td> </tr> </table>	Date of issuance of this report 07 November 2006 (07.11.2006)	Authorized officer  Athina Nickitas-Etienne	e-mail: pt04@wipo.int
Date of issuance of this report 07 November 2006 (07.11.2006)				
Authorized officer  Athina Nickitas-Etienne				
e-mail: pt04@wipo.int				

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY



To:  
**GOWLING LAFLEUR HENDERSON LLP**  
Suite 4900, Commerce Court West  
TORONTO, Ontario  
Canada, M5L 1J3

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing 12 August 2005 (12-08-2005)  
(day/month/year)

Applicant's or agent's file reference  
T8467745US1

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
**PCT/CA2005/000699**

International filing date (day/month/year)  
06 May 2005 (06-05-2005)

Priority date (day/month/year)  
07 May 2004 (07-05-2004)

International Patent Classification (IPC) or both national classification and IPC  
IPC(7): A61L 2/03, A23L 3/005

Applicant  
**UNIVERSITY OF WATERLOO ET AL**

1. This opinion contains indications relating to the following items :

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Box No. I   | Basis of the opinion   |
| <input type="checkbox"/> Box No. II             | Priority   |
| <input type="checkbox"/> Box No. III            | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability   |
| <input type="checkbox"/> Box No. IV             | Lack of unity of invention   |
| <input checked="" type="checkbox"/> Box No. V   | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> Box No. VI             | Certain documents cited  |
| <input checked="" type="checkbox"/> Box No. VII | Certain defects in the international application   |
| <input type="checkbox"/> Box No. VIII           | Certain observations on the international application  |

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/CA  
Canadian Intellectual Property Office  
Place du Portage I, C114 - 1st Floor, Box PCT  
50 Victoria Street  
Gatineau, Quebec K1A 0C9  
Facsimile No.: 001(819)953-2476

Date of completion of this opinion  
20 June 2005 (20-06-2005)

Authorized officer  
**Rafal Byczko (819) 956-0502**

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
PCT/CA2005/000699

Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:

☒ the international application in the language in which it was filed

☐ a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ on paper

☐ in electronic form

c. time of filing/furnishing

☐ contained in the international application as filed.

☐ filed together with the international application in electronic form

☐ furnished subsequently to this Authority for the purposes of search.

3 ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statement that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments :

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>1-29</u>	YES
	Claims <u>30</u>	NO
Inventive step (IS)	Claims <u>1-29</u>	YES
	Claims <u>30</u>	NO
Industrial applicability (IA)	Claims <u>1-30</u>	YES
	Claims <u>none</u>	NO

2. Citations and explanations :

D1: US 5 662 031 (QIN et al.) 2 Sept. 1997 (02-09-1997)

**NOVELTY (N)**

Claims 1 to 29 comply with PCT Article 33(2) as no prior art alone discloses a treatment chamber or method for deactivating microorganisms in a fluid comprised of an electrode gap defining a biconcave treatment chamber through which fluid flows under the influence of gravity.

Claim 30 does not comply with PCT Article 33(2). D1 discloses the claimed subject matter before the claim date. D1 discloses a fluid treatment system using electrical pulses to inactivate microbes. Specifically D1 teaches that said treatment system has a treatment zone with faces that are contoured (column 5 lines 41-44). This can be clearly seen in Fig. 2, reference character (182). Considering this disclosure the subject matter of claim 30, comprised of a fluid treatment chamber with electrodes having opposite convex surfaces forming a biconcave annual treatment space, would have been common knowledge to a skilled technician on the claim date.

**INVENTIVE STEP (IS)**

Claims 1 to 29 comply with PCT Article 33(3) as no prior art alone or in combination discloses a treatment chamber or method for deactivating microorganisms in a fluid comprised of an electrode gap defining a biconcave treatment chamber through which fluid flows under the influence of gravity.

Claim 30 does not comply with PCT Article 33(3). D1 discloses the claimed subject matter before the claim date. D1 discloses a fluid treatment system using electrical pulses to inactivate microbes. Specifically D1 teaches that said treatment system has a treatment zone with faces that are contoured (column 5 lines 41-44). This can be clearly seen in Fig. 2, reference character (182). Considering this disclosure the subject matter of claim 30, comprised of a fluid treatment chamber with electrodes having opposite convex surfaces forming a biconcave annual treatment space, would have been common knowledge to a skilled technician on the claim date.

**INDUSTRIAL APPLICABILITY (IA)**

Claims 1 to 30 comply with PCT Article 33(4) as the subject matter of said claims has obvious industrial applicability and can be made and used in industry.

**Box No. VII**      **Certain defects in the international application**

The following defects in the form or contents of the international application have been noted :

The abstract does not comply with **Rule 8.1(d)** of the Patent Cooperation Treaty Regulations. Each technical feature mentioned in the abstract and illustrated in the international application shall be followed by reference signs, placed between parenthesis.

The drawings and the description do not comply with **PCT Rule 11.13(i)**. Reference signs not mentioned in the description shall not appear in the drawings and vice versa.

- a. Reference character (306) identifying the annular conduit on page 12 line 21 is not present in Fig. 3,
- b. Reference character (534) identifying a radially dispersion zone on page 16 line 18 can not be found in the drawings.
- c. Reference character (900) identifying an alternate electrode assembly on page 19 line 25 can not be found in the drawings.

The drawings and the description do not comply with **PCT Rule 11.13(m)**. The same features, when denoted by reference signs shall, throughout the entire application, be denoted by the same signs. The reference character (304) is used on page 12 to identify the channel (line 23) and the reservoir (line 24).

The drawings do not comply with **PCT Rule 11.11**. The drawings shall not contain text matter.

The drawings do not comply with **PCT Rule 11.12**. The drawing shall be free from alterations overwritings and interlineations.